Atchafalaya Bar Channel

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1 May 2007

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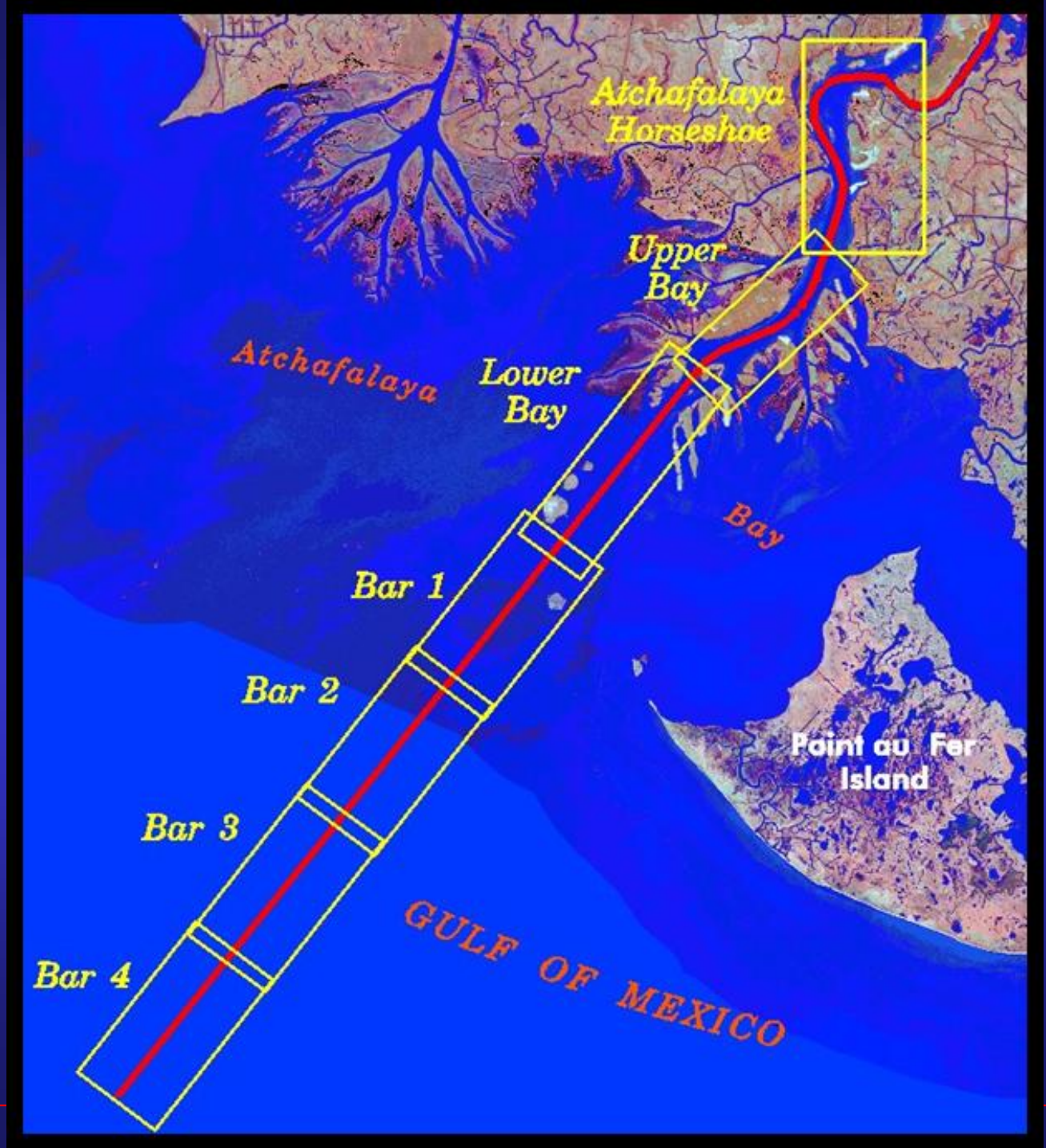

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Understanding Sediment Transport

Large Volumes of Fine Grained Sediments across the Bay.

Fluff Pockets and Fluff transport is evident

But, sediments settle and consolidate in the channel as soft but somewhat stiff mud (not fluid mud or fluff)

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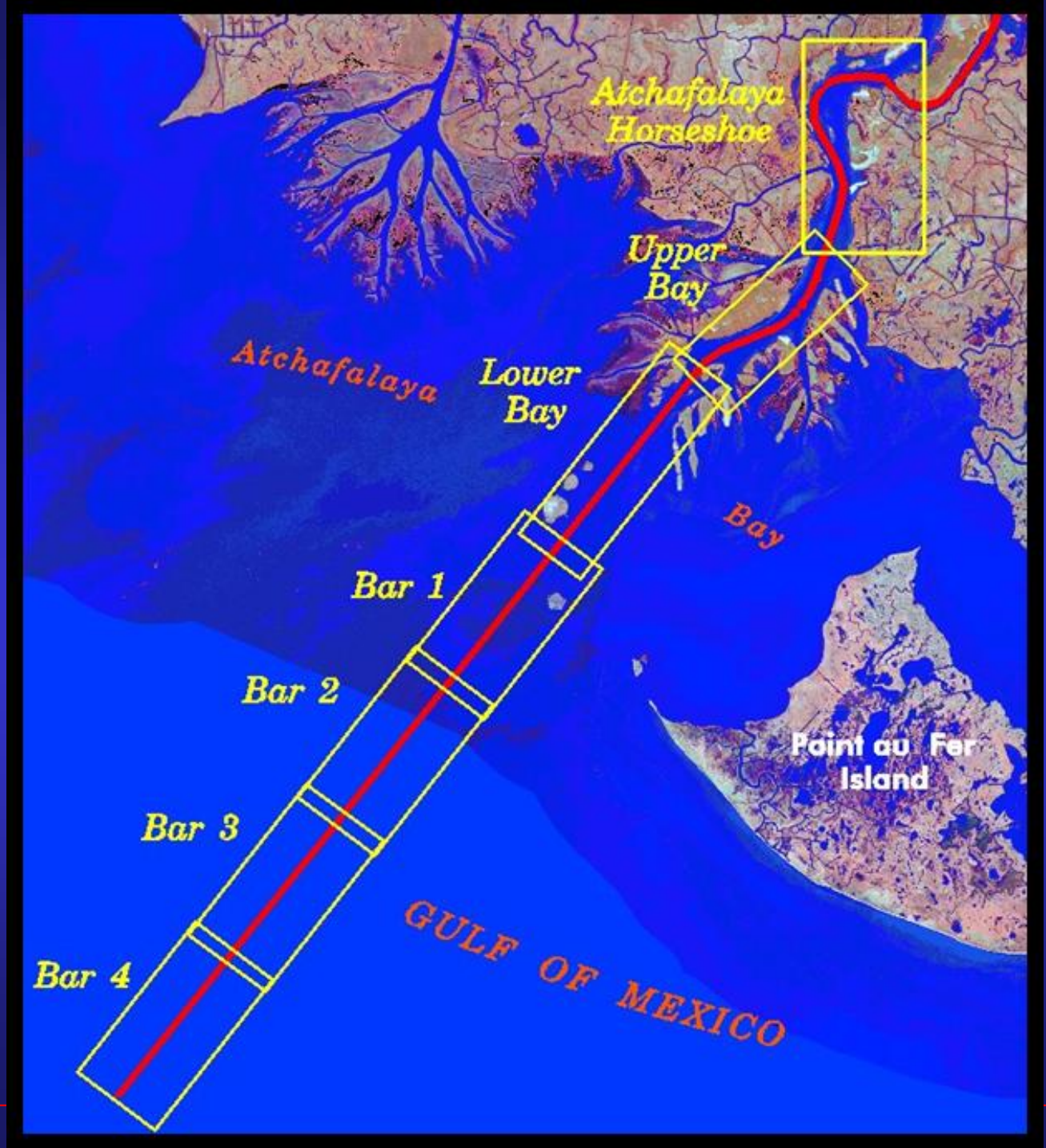

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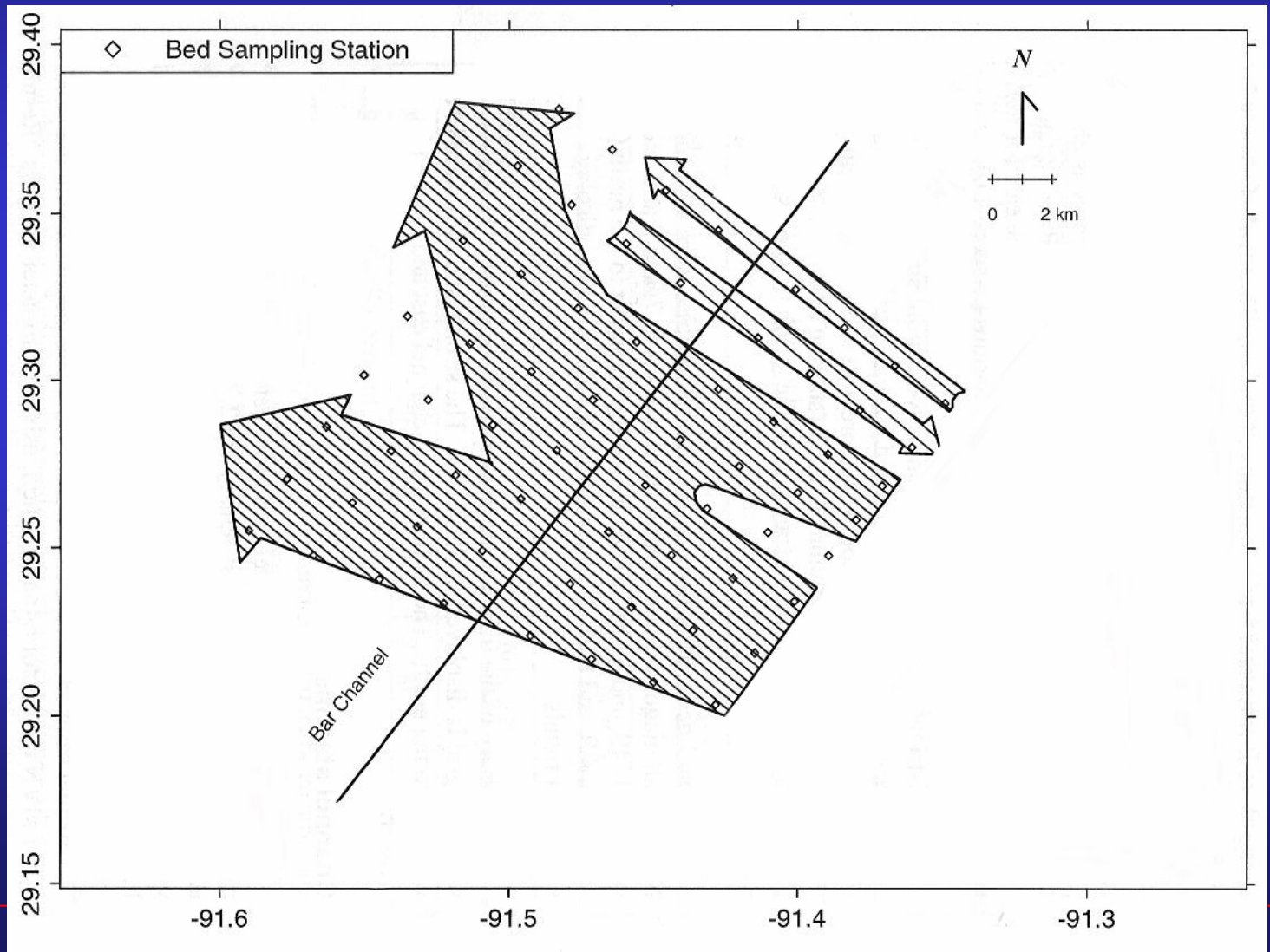
Sediment Pathway Trends



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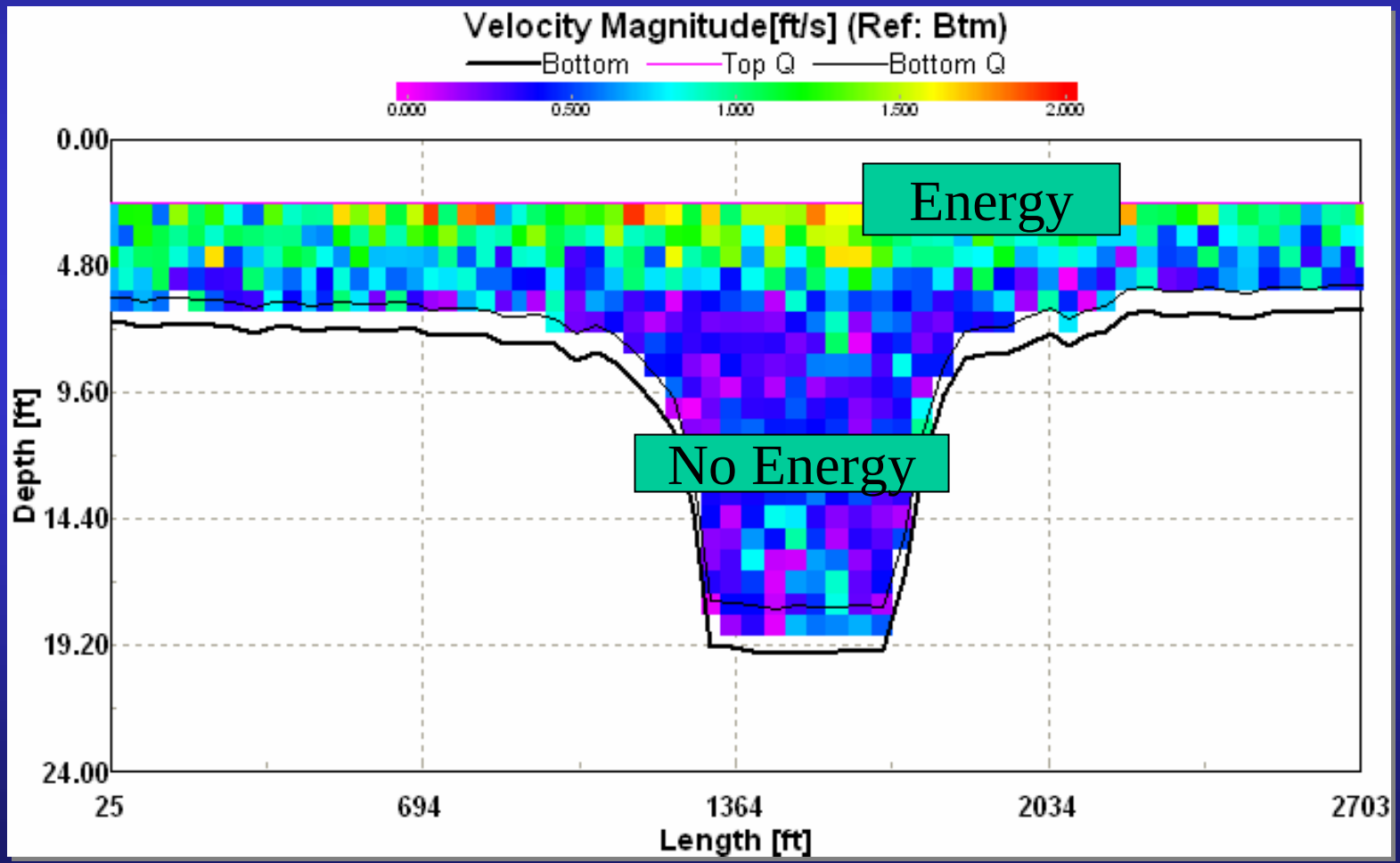
Atchafalaya Bar Channel Cross Section



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Solutions Investigated

Designs and Maintenance Alternatives Stem from

Value Engineering Study

and

Additional Ideas from Other Projects and Discussions

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VE Study Alternatives Evaluated

Alternative Dredge Types – Dustpan, Hopper

Cross Channel Construction – A series of perpendicular channels aimed at increasing cross-channel sediment Transport

Parallel Channel Construction – Additional Parallel Channel Cuts to trap cross-channel sedimentation

Sloped Channel/Sediment Sump Sloped channel grade with sump for fixed point Dredging

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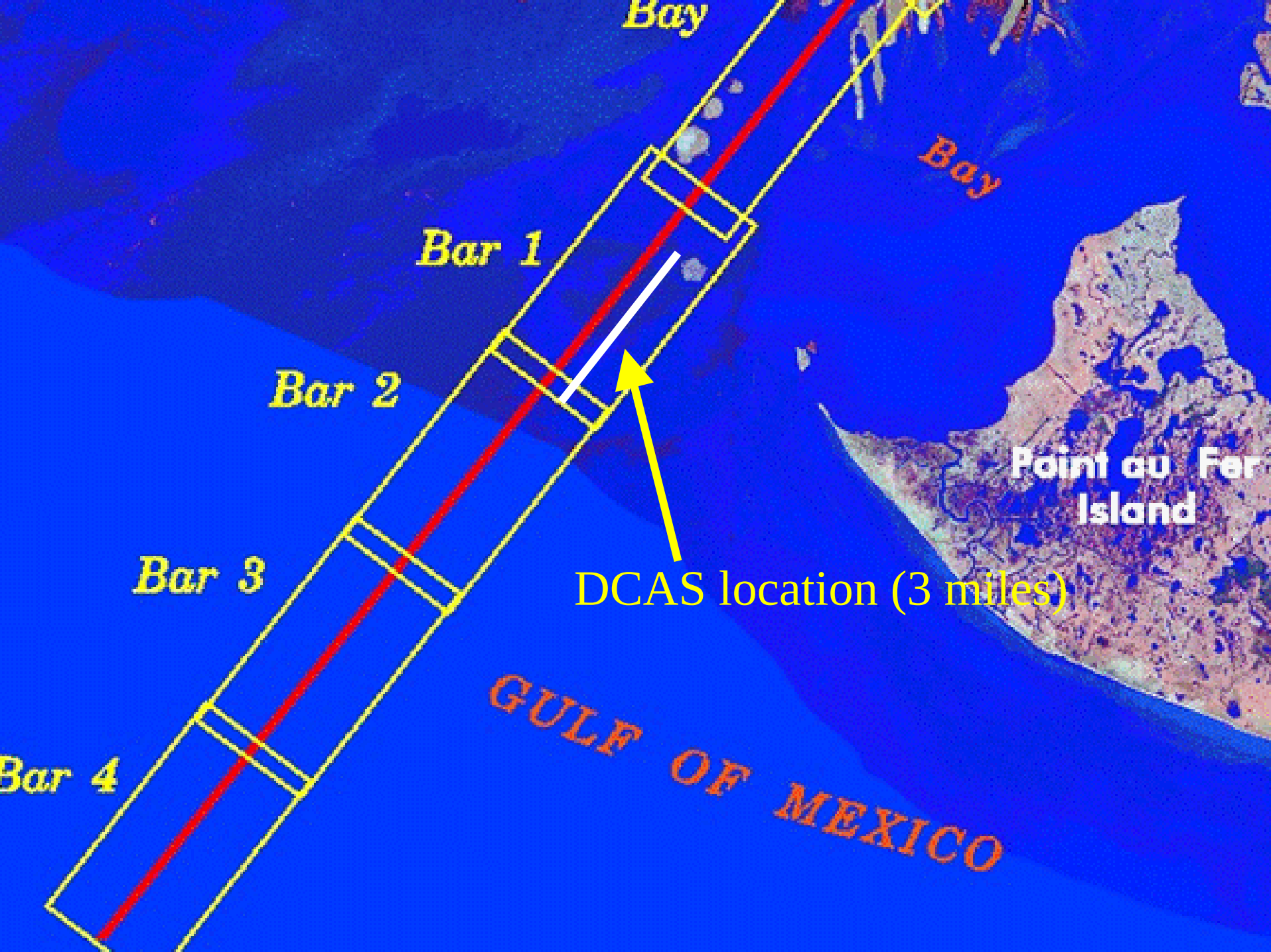
Additional Alternatives Evaluated

Channel Alignment Structure – Model studies show that a structure constructed on the East side of the channel shows significant maintenance improvement

Reef Re-construction – Restoring the former reef from Point Au Fer west


Bay
Bar 1
Bay
Bar 2
Point au Fer
Island
Bar 3
DCAS location (3 miles)
GULF OF MEXICO
Bar 4


Restored Reef Location
with a gap for the Bar
Channel
Bay
Bay
Bar 1
Bar 2
Bar 3
Bar 4
Point au Fer
Island
GULF OF MEXICO

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Demonstration Channel Alignment Structure

- DCAS Construction Methods
  - Geo-Tubes
  - Rock structure

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Demonstration Channel Alignment Structure

- Geo Tube Construction Considerations
  - Best if filled with sand. Closest source is Horseshoe area.
  - Durability/Damage possible (tears from impact, long-term material breakdown)
  - Cost: More expensive, especially with no close fill material.

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Demonstration Channel Alignment Structure

- Rock Construction Considerations
  - Easier Construction
  - Durable
  - Less Cost
  - Foundation support problems may be more of a problem.

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Demonstration Channel Alignment Structure

- DCAS Dimensions
  - 3 miles long
  - 1 on 2 side slopes at +2 ft elevation, mlg.
- Environmental Assessment allows up to 4 miles length with up to +4 ft elevation, mlg.

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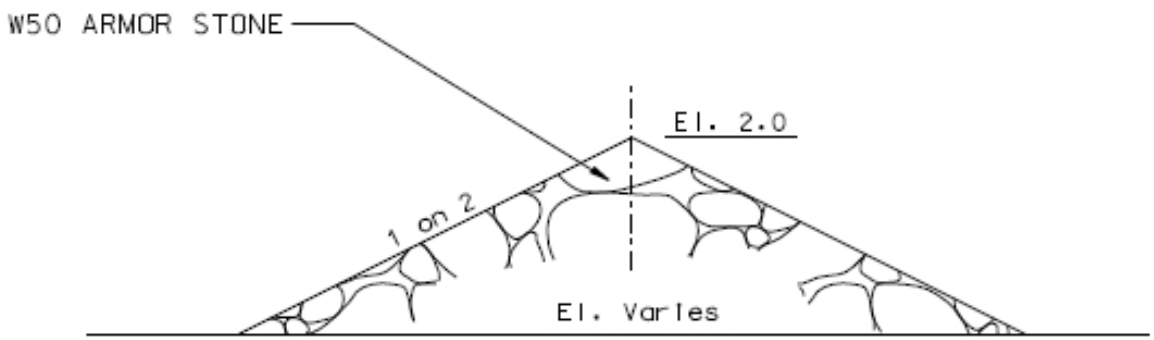
Demonstration Channel Alignment Structure

ARMOR STONE

MINIMUM STONE SIZE	3300 LBS
W50	4400 LBS
MAXIMUM STONE SIZE	5500 LBS



TYPICAL CROSS SECTION
(DCAS)
SCALE: NONE

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Demonstration Channel Alignment Structure Construction

Schedule:

- **WQ Certification – Complete**
- **Coastal Zone Consistency Statement – Complete**
- **Environmental Assessment – Ready for Commanders signature**
- **Advertise for Construction – May 2007**
- **Construction start – August 2007**

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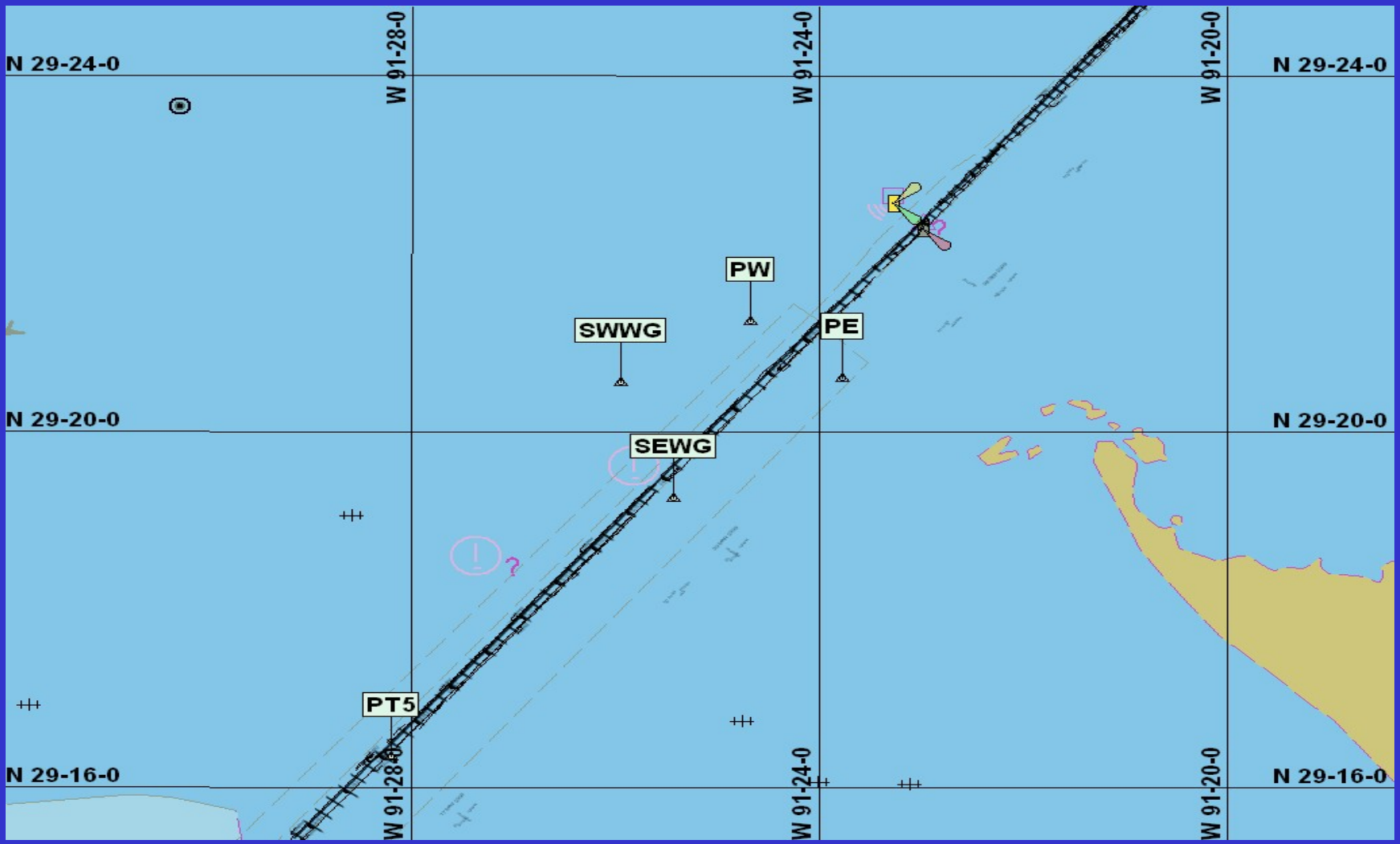
Monitoring Locations



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Questions?